

# ALBA

# TV-D3406

MODEL

SERVICE MANUAL

# SAFETY PRECAUTIONS

## IMPOTANT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by ⚠ in the Schematic Diagram and Replacement parts List.

It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent X-RADIATION, Shock, Fire, or other Hazards.

Do not modify the original design without permission of manufacturer.

### General Guidance

An Isolation Transformer should always be used during the servicing of a receiver whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks.

It will also protect the receiver and its components from being damaged by accidental shorts of the circuitry that may be inadvertently introduced during the service operation.

If any fuse (or Fusible Resistor) in this TV receiver is blown, replace it with the specified.

When replacing a high wattage resistor (Oxide Metal Film Resistor, over 1w), keep the resistor 10mm away from PCB. Keep wires away from high voltage or high temperature parts.

Due to high vacuum and large surface area of picture tube, extreme care should be used in handling the picture Tube.

Do not lift the picture tube by its Neck.

### x-RAY Radiation

#### Warning:

The source of X-RAY RASIAATION in this TV receiver is the High Voltage section and the picture Tube. For continue S-RAY RADIATION protection, the replacement tube must be the same type tube as specified in the Replacement parts List

To determine the presence of high voltage, use an accurate high impedance HV meter.

Adjust brightness, color, contrast controls to minimum.

Measure the high voltage.

The meter reading should indicate  $23.5 \pm 1.5 \text{KV}$ : 14-19 inch,  $26 \pm 1.5 \text{kv}$ : 19-21 inch. If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.

Before returning the receiver to the customer always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as antennas, terminals, etc; to be sure the set is safe to operate without damage of electrical shock.

### Leakage current cold check (Antenna cold check )

with the instrument AC plug removed from AC source, connect an electrical jumper across the two AC plug prongs. Place the AC switch in the on position, connect one lead of ohm-meter to the AC plug prongs tied together and touch other ohm-meter lead in turn to each exposed metallic parts such as antenna terminals, phone jacks, etc.

If the exposed metallic part has a return path to the chassis, the measured resistance should be between  $1 \text{M}\Omega$  and  $5.2 \text{M}\Omega$ . When the exposed metal has no return path to the chassis the reading must be infinite. An other abnormality exists that must be corrected before the receiver is returned to the customer.

### Leakage Current Hot Check (See below Figure)

plug the AC cord DIRECTLY into the AC outlet.

Do not use a line Isolation Transformer during this check.

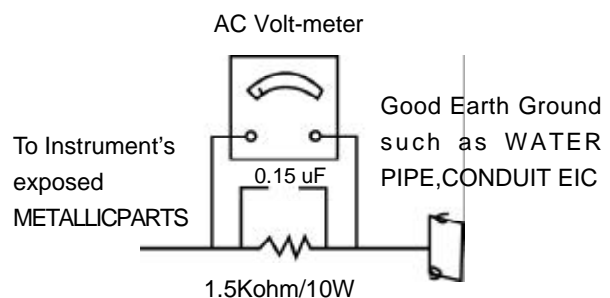
Connect  $1.5 \text{k}/10 \text{watt}$  resistor in parallel with a  $0.15 \mu\text{F}$  capacitor between a known good earth ground (Water pipe, Conduit, etc.) and the exposed metallic parts.

Measure the AC voltage across the resistor using AC voltmeter with 1000 ohms/volt or more sensitivity.

Reverse plug the AC cord into the AC outlet and repeat AC voltage measurements for each exposed metallic part. Any voltage measured must not exceed 0.75 volt RMS which corresponds to 0.5mA.

In case any measurement is out of the limits specified, there is possibility of shock hazard and the set must be checked and repaired before it is returned to the customer.

### Leakage Current-Hot Check circuit



# SERVICING PRECAUTIONS

**CAUTION:** Before servicing receivers covered by this service manual its supplements and addenda, read and follow the SAFETY PRECAUTIONS on page 3 of this publication. **NOTE:** If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions on page 3 of this publication, always follow the safety precautions. Remember: Safety First.

## General Servicing precautions

1. Always unplug the receiver AC power cord from the AC power source before:

- Removing or reinstalling any component, circuit board module or any other receiver assembly.
- Disconnecting or reconnecting any receiver electrical plug or other electrical connection.
- Connecting a test substitute in parallel with an electrolytic capacitor in the receiver.

**CAUTION:** A wrong part substitution or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.

- Discharging the picture tube anode.
2. Test high voltage only by measuring it with an appropriate high voltage meter or other voltage measuring device (DVM, FETVOM, etc) equipped with a suitable high voltage probe.  
Do not test high voltage by "drawing an arc".
3. Discharge the picture tube anode only by (a) first connecting one end of an insulated clip lead to the degaussing or kine aquadag grounding system shield at the point where the picture tube socket ground lead is connected, and then (b) touch the other end of the insulated clip lead to the picture tube anode button, using an insulating handle to avoid personal contact with high voltage.
4. Do not spray chemicals on or near this receiver or any of its assemblies.
5. Unless specified otherwise in this service manual, clean electrical contacts only by applying the following mixture to the contacts with a pipe cleaner, cotton-topped stick or comparable nonabrasive applicator: 10% (by volume) Acetone and 90% (by volume) isopropyl alcohol (90%-90% strength) **CAUTION:** This is a flammable mixture. Unless specified otherwise in this service manual, lubrication of contacts is not required.
6. Do not defeat any plug/socket B+ voltage interlocks with which receivers covered by this service manual might be equipped.
7. Do not apply AC power to this instrument and/or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.
8. Always connect the test receiver ground lead to the receiver chassis ground before connecting the test receiver positive lead.

Always remove the test receiver ground lead last.

9. Use with this receiver only the test fixtures specified in this service manual.

**CAUTION:** Do not connect the test fixture ground strap to any heatsink in this receiver.

## Electrostatically Sensitive(ES) Devices

Some semiconductor (solid state) devices can be damaged

easily called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively,

Obtain and wear a commercially available discharging wrist strap device, which should be removed to prevent potential shock reasons prior to applying power to the unit under test.

2. After removing an electrical assembly equipped with ES device, place the assembly on a conductive surface such as aluminum foil to prevent electrostatic charge buildup or exposure of the assembly.

3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.

4. Use only an anti-static type solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.

5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.

6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).

7. Immediately before removing the protective material from the leads of a replacement ES device touch the protective material to the chassis or circuit assembly into which the device will be installed.

**CAUTION:** Be sure no power is applied to the chassis or circuit and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

## General Soldering Guidelines

1. Use a grounded-tip, low-wattage soldering iron and appropriate tip size and shape that will maintain tip temperature within the range of 500k to 600k.

2. Use an appropriate gauge of RMA resin-core solder composed of 60 parts tin/40 parts lead.

3. Keep the soldering iron tip clean and well tinned.

4. Thoroughly clean the surfaces to be soldered. Use a mild wirebrush (0.5 inch or 1.25 cm) brush with a metal handle. Do not use freon-propelled spray-on cleaners.

5. Use the following unsoldering technique

a. Allow the soldering iron tip to reach normal temperature (500k to 600k)

b. Heat the component lead until the solder melts.

c. Quickly draw the melted solder with an anti-static suction

# SERVICING PRECAUTIONS

type solder removal device or with solder braid.

**CAUTION:** Work quickly to avoid overheating the circuit board printed foil.

6. Use the following soldering technique.

a. Allow the soldering iron tip to reach a normal temperature (500k to 600k)

b. First, hold the soldering iron tip and solder the strand.

Against the component lead the solder melts.

c. Quickly move the soldering iron tip to the junction of the component lead and the printed circuit foil and hold it there only until the solder flows onto and around both the component lead and the foil.

**CAUTION:** work quickly to avoid overheating the circuit board printed foil.

d. Closely inspect the solder area and remove any excess or splashed solder with a small wire-bristle brush.

## IC Remove/Replacement

Some chassis circuit boards have slotted holes (oblong) through which the IC leads are inserted and then bent flat against the circuit foil. When holes are the slotted type the following technique should be used to remove and replace the IC. When working with boards using the familiar round hole use the standard technique as outlined in paragraphs 5 and 6 above.

### Removal

1. Desolder and straighten each IC lead in one operation by gently prying up on the lead with soldering iron tip as the solder melts.

2. Draw away the melted solder with an anti-static suction-type solder removal device (or with solder braid) before removing the IC.

### Replacement

1. Carefully insert the replacement IC in the circuit board

2. Carefully bend each IC lead against the circuit foil pad and solder it.

3. Clean the soldered areas with a small wire-bristle brush. (It is not necessary to reapply acrylic coating to the areas).

"Small-Signal" Discrete Transistor

### Removal/Replacement

1. Remove the defective transistor by clipping its leads as close as possible to the component body.

2. Bend into a "u" shape the end of each of three leads remaining on the circuit board.

3. Bend into a "u" shape the replacement transistor leads.

4. Connect the replacement transistor leads to the corresponding leads extending from the circuit board and crimp the "u" with long nose pliers to insure metal to metal to metal contact then solder each connection.

## Power Output, Transistor Device

### Removal/Replacement

1. Heat and remove all solder from around the transistor leads.

2. Remove the heatsink mounting screw (if so equipped).

3. Carefully remove the transistor from the heat sink of the circuit board.

4. Insert new transistor in the circuit board.

5. Solder each transistor lead and clip off excess lead.

6. Replace heatsink.

### Diode Removal/Replacement

1. Remove defective diode by clipping its leads as close as possible to diode body.

2. Bend the two remaining leads perpendicularly to the circuit board.

3. Observing diode polarity wrap each lead of the new diode around the corresponding lead on the circuit board.

4. Securely crimp each connection and solder it.

5. Inspect (on the circuit board copper side) the solder joints of the two "original" leads. If they are not shiny reheat them and if necessary apply additional solder.

## Fuse and Conventional Resistor

### Removal/Replacement

1. Clip each fuse or resistor lead at top of the circuit board hollow stake.

2. Securely crimp the leads of replacement component around notch at stake top.

3. Solder the connections.

**CAUTION:** Maintain original spacing between the replaced component and adjacent component and the circuit board to prevent excessive component temperatures.

### Circuit Board Foil REPAIR

Excessive heat applied to the copper foil of any printed circuit board will weaken the adhesive that bonds the foil to the circuit board causing the foil to separate from or "lift-off" the board. The following guidelines and procedures should be followed whenever this condition is encountered.

### At IC Connections

To repair a defective copper pattern at IC connections use the following procedure to install a jumper wire on the copper pattern side of the circuit board. (Use this technique only on IC connections)

1. Carefully remove the damaged copper pattern with a sharp knife. (Remove only as much copper as absolutely necessary).

2. Carefully scratch away the solder resist and acrylic coating (if used) from the end of the remaining copper pattern.

3. Bend a small "U" in one end of a small gauge jumper wire and carefully crimp it around the IC pin. Solder the IC connection.

4. Route the jumper wire along the path of the out-away copper pattern and let it overlap the previously scraped end of the good copper pattern. Solder the overlapped area and dip off any excess jumper wire.

### At Other Connections

Use the following technique to repair the defective copper pattern at connections other than IC pins. This technique involves the installation of a jumper wire on the component side of the circuit board.

1. Remove the defective copper pattern with a sharp knife. Remove at least 1/4 inch of copper, to ensure that a hazardous condition will not exist if the jumper wire opens.

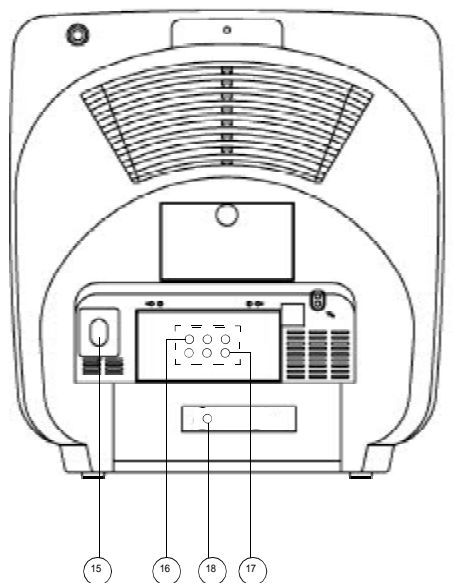
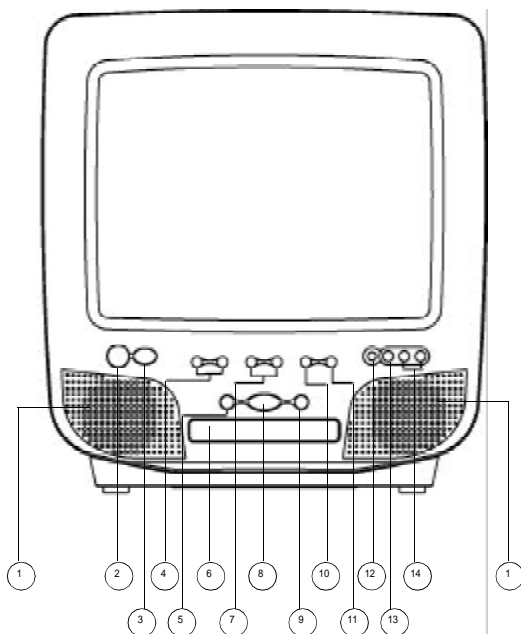
2. Trace along the copper pattern from both sides of the pattern break and locate the nearest component that is directly connected to the affected copper pattern.

3. Connect insulated 20-gauge jumper wire from the lead of nearest the nearest component on one side of the pattern break to the lead of the nearest component on the other side. Carefully crimp and solder the connections.

**CAUTION:** Be sure the insulated jumper wire is dressed so that it does not touch components or sharp edges.

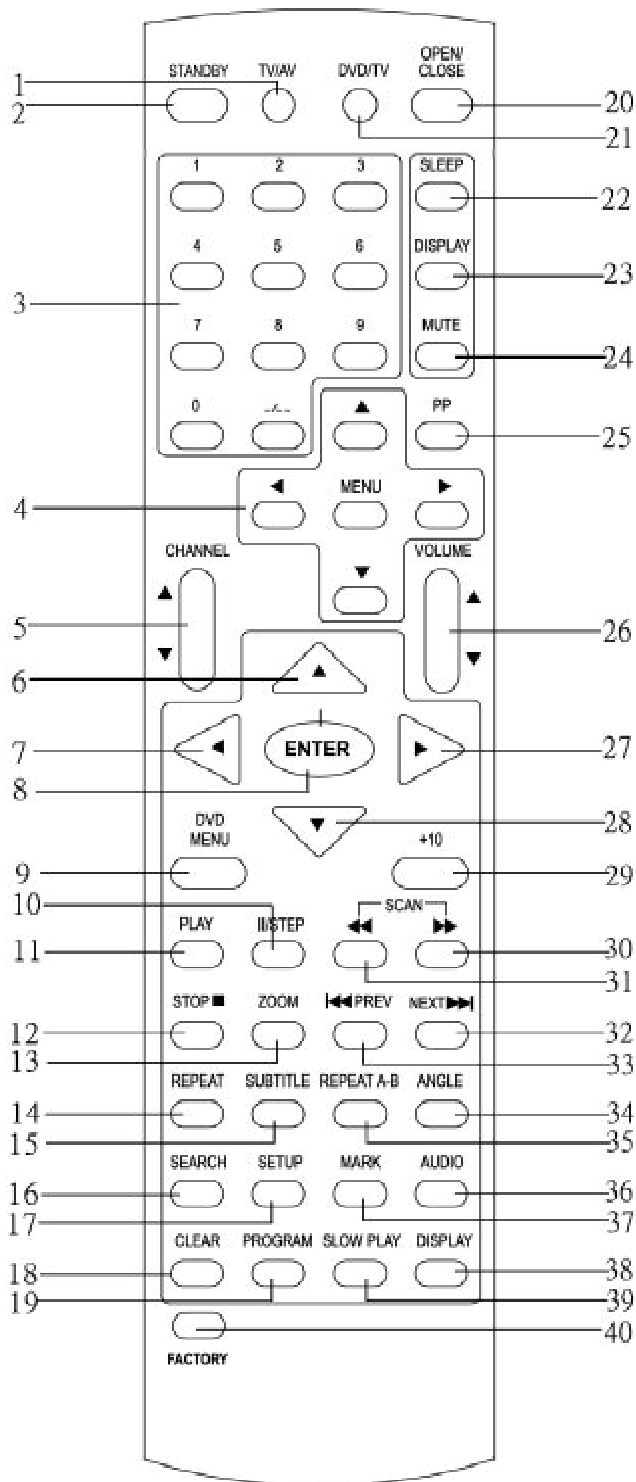
## LOCATION OF CONTROLS

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- 1. Speaker
- 2. Power Button
- 3. Remote Sensor
- 4. Channel Buttons
- 5. Open/Close Button
- 6. DVD Loader
- 7. Volume Buttons
- 8. DVD Play Button
- 9. DVD Stop Button
- 10. TV Menu Button
- 11. TV/AV/DVD Button
- 12. Earphone Jack
- 13. Video (1) Input
- 14. Audio(1) Input (R+L)
- 15. 75 Ohm Antenna Socket
- 16. Video/Audio(2) Input
- 17. Video/Audio Output
- 18. Audio digital Out Socket (For DVD only)

## LOCATION OF CONTROLS



1. TV/AV Button
2. Standby Button
3. Numeric Buttons
4. TV Menu/Navigation Arrows Buttons
5. Channel Button
6. DVD Navigation Up Button
7. DVD Navigation Left Button
8. DVD Enter Button
9. DVD Menu Button
10. Pause/Step Button
11. Play Button
12. Stop Button
13. Zoom Button
14. Repeat Button
15. Subtitle Button
16. Search Button
17. Setup Button
18. Clear Button
19. Program Button
20. Open/Close Buttons
21. DVD/TV Buttons
22. Sleep Button
23. TV Display Button
24. Mute Button
25. PP Button
26. Volume Up/Down Buttons
27. DVD Navigation Right Button
28. DVD Navigation Down Button
29. DVD +10 Button
30. Fast forward Button
31. Fast backward Button
32. Next Button
33. Previous Button
34. Angle Button
35. Repeat A-B Button
36. Audio Button
37. Mark Button
38. DVD Display Button
39. Slow Play Button
40. Factory Button

# OPERATING THE TV

## Using the remote control

- Any object between the remote control and the main unit will block the path of the beam when it is being used.
- Dark walls,direct sunshine or very bright light will reduce the remote control sensitivity.
- Hold the remote control within an angle of about 30° from either side of the remote sensor.
- When the remote control is in front of the remote sensor,it will work within about 7 meters (23 feet) from the unit.
- Point the front of the remote control directly at front of the unit.
- Function keys do not work when pressing several keys at the same time.

## SPECIFICATION

- Colour System PAL
- Power Requirement AC 220V 50Hz
- Power consumption. 90W
- Stand-by consumption 10 W
- **Tuning system:**  
VST System  
255 Programme memory
- **Antenna input impedance:**VHF/UHF 75 ohm,unbalanced
- **OSD(On Screen Display):** MENU Type
- **Voice coil impedance:** 8 ohm
- **Sound output:** mono 1.5 W FROM 14"; 2W FROM 21"
- **External In/Output**  
Audio-In:0.5 Vrms  $\pm$  3 db, over 10k ohm  
Audio-Out: 0.5Vrms  $\pm$  3 db,below 1k ohm  
Video-In/Out: 1Vp-p+3db,75 ohm  
R,G,B IN: 0.7 VP-P  $\pm$  3 db
- **Feature:** Auto programme  
PSM (Picture Status Memory)  
8 LANGUAGE: ENGLISH.SPANISH.FRENCH.GERMAN.ITALIAN.DUTCH.RUSSIAN.  
PORTUGUESE.

## ALIGNMENT INSTRUCTION

### 1.PLEASE READ BEFORE ATTEMPTING SERVICE

1. Do not connect any antenna plug directly to the tuner socket and do not connect any equipments directly to the TV chassis,otherwise it may be burnt out the TV or equipment,except an isolation transformer is used for main power source or the TV sets.
- 2.Never disconnect any leads while reveiver is in operation.
- 3.Disconnect all power before attempting any repairs.
- 4.Do not short any portion of the circuit while power is on.
- 5.For safety reasons,all parts replaced should be identical(for parts and pat numbers see parts list)
- 6.Before alignment the set must be pre-heated for 30 minutes or more and erase magnetism thoroughly from CRT front chassis frame by erase coil.

## TEST EQUIPMENT

- |                              |   |
|------------------------------|---|
| 1.Colour Bar/Dot/Cross Hatch | 5.High Voltage Meter                    |
| 2.Oscilloscope               | 6. Ampere Meter (0.5 Class,DC 3mA Max.) |
| 3.Vacuum Tube Voltmeter      | 7. Demagnetizing Coil                   |
| 4. Volt Ohmmeter             | 8. Closed Caption Encoder               |
|                              | 9. High Pot Tester                      |

### 1. B+ADJUSTMENT

1. Connect a digital voltmeter to B+ and Ground.
2. Set Brightness Contrast to minimum.
3. Adjust Screen Volume on FBT until the picture can just be seen.
4. Adjust VR901 to obtain a reading of  $110 \pm 0.5V$  From 21",  $107V \pm 0.5V$  From 14".

### ALIGNMENT STEP

1. Press the SERVICE button of the remote control to enter into the SERVICE MODE.  
Press the numeric button 0-6 to enter into the SER VCJ 0-6 MENU.
2. Press  $\blacktriangle \blacktriangledown$  button to select relevant item.
3. Press  $\blacktriangleleft \blacktriangleright$  button to change the DATA.
4. Press the MENU button of the remote control to quit the SERVICE MODE.

#### Remarks:

Press the picture PP button of the remote control to set the picture to "STANDARD".

### II. VIF ALIGNMENT(IFFS)

1. Enter into the SERVICE MODE SER. select VIF FREQ.
2. Press the  $\blacktriangleleft \blacktriangleright$  button to obtain a correct DATA.

### III. AGC ALIGNMENT (TOP)

1. Receive monoscope pattern at CH 69 and the input signal is  $62 \pm 3dB$ .
2. Connect a digital voltmeter between the TUNER AGC Terminal and ground.
3. Enter into the SERVICE MODE and select RF. AGC. ADJ.
4. Press  $\blacktriangleleft \blacktriangleright$  button to adjust to the maximum value '00'.
5. And then adjust the value until the voltage drop down  $\geq 0.4v$ .

Remark: a/. The drop down voltage should be more than and tends to 0.4v.

b/. No observable noise can be seen.

### IV. VERTICAL ALIGNMENT

1. Receive monoscope pattern.
2. Enter into the SERVICE MODE SER VCJ.0 and select the following items V.SHIFT.V.SIZE.V.SCORR.  
V.LIN
3. Adjust the value of the above items to obtain a normal picture.

### V. HORIZONTAL ALIGNMENT

1. Receive monoscope pattern
2. Enter into the SERVICE MODE and select the SER VCJ.0 H.PHASE item.
3. Adjust the Value to obtain the picture at center  $\pm 2mm$ .



## **VI. G2 VOLTAGE ALIGNMENT**

1. Receive a grey scale pattern.
2. Enter the SERVICE MODE to select the TV.
3. Press the ► button then the TV will become Horizontal Line.
4. To adjust the screen VR to make the Horizontal Line just illuminate.
5. After a justment is completed, press the ◀ button then the TV Screen will become Normal.

## **VII. WHITE BALANCE ALIGNMENT**

1. Degauss the picture by degaussing coil.
2. Receive a black and white pattern.
3. Enter into the SERVICE MODE select.DRIVE.R.DRIVE.B.CUTOFF.R.CUTOFF.G CUTOFF.B.
4. Adjust the value to obtain uniformly white picture  $9300^{\circ}\text{K} \pm 3 \text{ JND}$

## **VIII.SUB-BRIGHTNESS ALIGNMENT(SBRI)**

1. Receive a grey scale pattern.
2. Enter into the SERVICE MODE select SUB-BRI .
3. Adjust the value until the brighness bar can just be seen.

## **IX. FOCUS ALIGNMENT**

- 1) Set the Brightness and Contrast to middle position.
- 2) Reveive a monoscope pattern.
- 3) Adjust focus control to obtain sharpest picture.

## **X. HIGH POT TESTING**

- 1) Short the L-pole and N-pole of AC line cord.
- 2) Switch on the power switch of the TV set.
- 3) The High Pot Tester(-)connect to the L and N pole, ( + ) to the METAL PART of CABINET.

<div>CONDITION</div> <div>SAFETY STD.</div>	TEST STANDARD	TEST STANDARD FOR PRODUCTION
VDE,SAA	3.0KV 10mA/1MIN	$\geq 3.5\text{KV} \leq 10\text{mA} / \geq 10\text{SEC}$
BS	4.0KV 10mA/1MIN	$\geq 4.0\text{KV} \leq 10\text{mA} / \geq 10\text{SEC}$
CHINASTANDARD	3.0KV 10mA/1MIN	$\geq 3.3\text{KV} \leq 5 \text{ mA} / \geq 6 \text{ SEC}$
UL	1.0KV 5mA/1MIN	$\geq 1.25\text{KV} \leq 5\text{mA} / \geq 1 \text{ SEC}$

## SERVICE MODE ALIGNMENT STEPS

1. Press the FACTORY button to enter to the service mode.
2. Press the --/- button to change the desired item page.
3. Press the Navigation Arrows button ▲ / ▼ to choose the desired item to be adjust.
4. Press the Navigation Arrows button ◀ / ▶ the adjust the volume.
5. Press the TV MENU button to exit the service mode

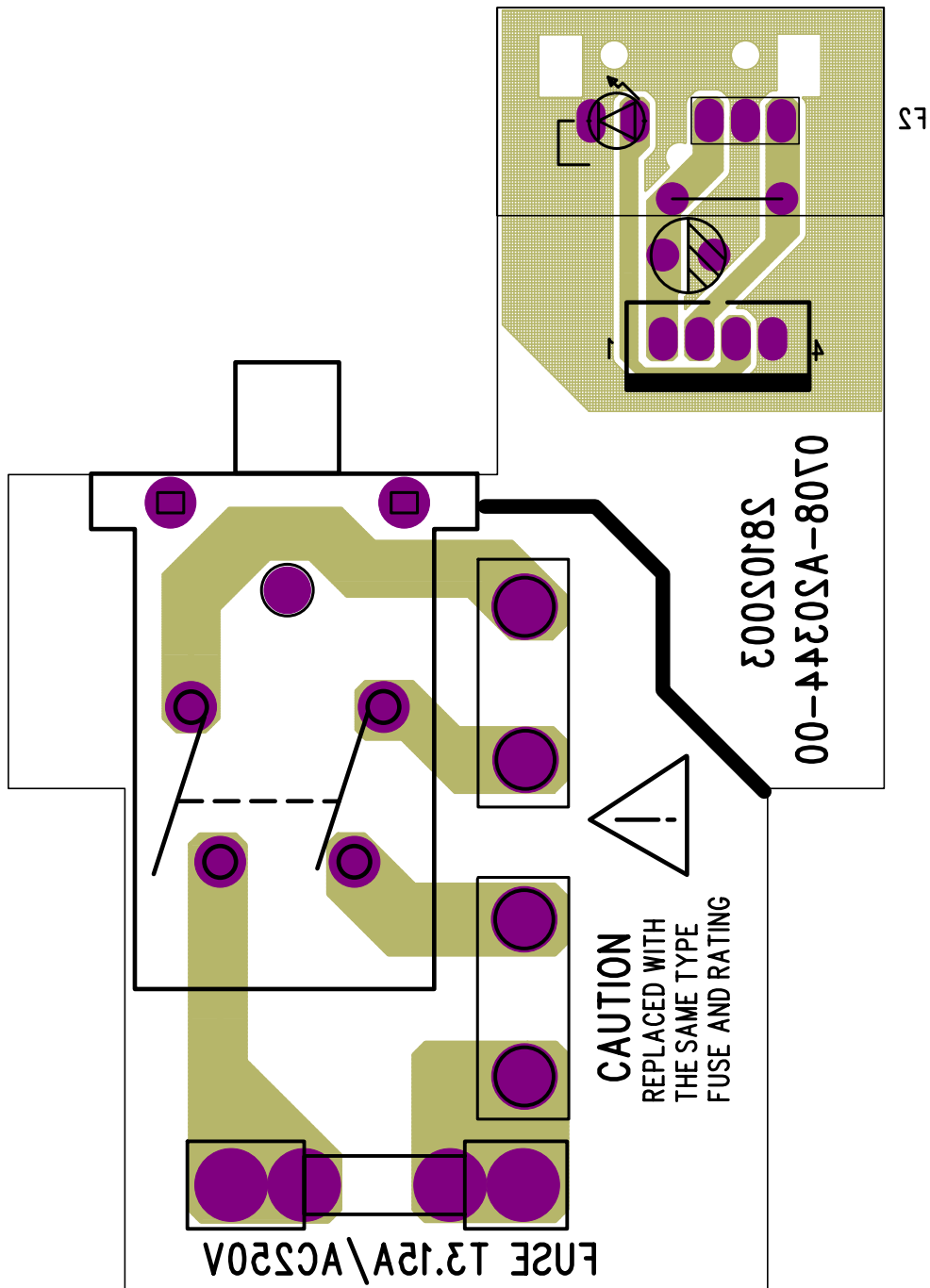
## FACTORY SETTING TABLE

SER VCJ0 ( item page )	Remarks	DESCRIPTION
H PHASE 0 ~ 31		Horizontal Phase Adjustment For Horizontal Picture Position Adjustment;
H VCO ADJ 0 ~ 7		Horizontal VCO Free Running Frequency Adjustment;
V SHIFT 0 ~ 7		Vertical Ramp Start Timing Adjustment For Vertical Picture Position Adjustment;
V SIZE 0 ~ 63		Vertical Ramp Amplitude Adjustment For Vertical Picture Size Adjustment;
V S CORRECTION 0 ~ 63		Vertical S Correction Adjustment;(For M61264 IC Only)
V LINEARITY 0 ~ 63		Vertical Linearity Adjustment; (For M61264 IC Only)
Y DL TIME ADJ 0 ~ 3		Y Signal Delay Time Adjustment;
Y DL FINE ADJ 0 / 1		Y Signal Delay Time Fine Adjustment;
SIGNAL 0 ~ 15		Adjustment Signal Selection;
DR 0 ~ 127		R OUT Amplitude Adjustment;
DB 0 ~ 127		B OUT Amplitude Adjustment;
CR 0 ~ 255		R OUT Pedestal Level Adjustment;
CG 0 ~ 255		G OUT Pedestal Level Adjustment;
CB 0 ~ 255		B OUT Pedestal Level Adjustment;
VT 0 / 1		Vertical Ramp Out Stop Selection;
SUB-BRI 0 ~ 100		Subsidiary Bright Adjustment;
V SYNC DET1 0 / 1	No	V Sync Det 1/2 V Sync; Minimum time; Det 1 Det 2 0 0 11.5usec 0 1 10usec 1 0 20.5usec 1 1 16.5usec
V SYNC DET2 0 / 1	No	
BGP FBP OFF 0 / 1	No	BGP output system switching; Status ' 0 ' = BGP is output regardless of FBP ' 1 ' = BGP is output only inside of FBP
S SLICE DOWN 0 ~ 3	No	Sync separation slice level selection;
AUTO SLICE DOWN 0 / 1	No	Sync detector slice level switch during video period; Status ' 0 ' = Slice level constant ' 1 ' = Slice level down during video period only

TAKE OFF	0 / 1	No	Chroma BPF/Take off switch; Compensate SAW Filter effect " 1 " = " Take off "; " 0 " = " BPF "
C ANGLE 95	0 / 1	No	Chroma relational angle of demodulation switch; Status ' 0 ' = 103degree --Standard value; ' 1 ' = 95degree;
EXT RGB C CLIP	0 / 1	No	Effective on " On Screen Display " only; Status ' 0 ' = OSD level has low limit control ' 1 ' = OSD level is dependent on contrast control
C CLIP LEVEL	0 / 1	No	C Clip Level Clipped contrast level; 0 = Low (32/128) ; 1 = High (48/128)
RF AGC ADJ	0 ~ 127		Tuner AGC Takeover Point Adjustment;
VIF VCO ADJ	0 ~ 63		VIF VCO Free-Running Frequency Adjustment;
VIF FREQ.	0 ~ 7		VIF VCO Frequency Selection;
VIF VIDEO OUT GAIN	0 ~ 7	No	VIF Video Out (Pin58) Amplitude Control;
STRAP FINE ADJ	0 ~ 7	No	Sound Frequency Adjustment;
STRAP FINE ADJ MSB	0 / 1	No	Sound Frequency Adjustment MSB bit;
S TRAP OFF	0 / 1	No	Sound trap frequency ON/OFF; Status '0'= Sound Trap ON ; ' 1 ' = Sound Trap OFF
OM DET	0 / 1	No	Over-modulation detector ON/OFF; Status ' 0 ' = Over-modulation detector OFF ' 1 ' = Over-modulation detector ON
AFT OUT LOW / OK / HIGH			AFT OUT Display;
S TRAP Q UP	0 / 1	No	Sound trap Frequency; Status '0' = Normal; '1' = Up
WHITE BACK	0 / 1		White Back Mode ON / OFF Selection; 0=OFF; 1= ON
ABCL	0 / 1	No	Auto Brightness And Contrast Limiter; 0=ACL (Auto Contrast Limiter) Operation; 1=ABCL (Auto Brightness And Contrast Limiter) Operation
ABCL GAIN	0 / 1	No	ABCL Gain Low Or High Switch; 0=Low; 1=High
HALF TONE SWITCH	0 / 1	No	Half Tone Function; 0=OFF(Normal Level); 1=Color And Luminance Level Are Half
ANALOG OSD	0 / 1	No	OSD input Analog/Digital switch; Status '0' = Digital '1'= Analog
OSD LEVEL	0 / 1	No	OSD output level switch; Status '0'= 70%; '1'= 90%;
Y SW LPF	0 / 1	No	Y SW OUT, pin 31, LPF ON/OFF; Status ' 0 ' = Flat ; ' 1 ' = LPF (fc = 700kHz) If Y SW OUT is used both AV-out and CCD-out, do not turn ON the Y SW LPF bit, because it occurs loss high frequency in AV-out. In that case, make a filter and insert as below.
VIDEO TONE GAIN SW	0 / 1	No	Video Tone Gain Switch; 0=Standard; 1=Sharp
C TRAP FINE ADJ	0 ~ 3	No	Chroma Trap Adjustment;
DOUBLE TRAP	0 / 1	No	Chroma Double Trap Selection;

BLK STRE. OFF      0 / 1		Black Stretch Function ON / OFF; 0=ON; 1=OFF
BLK STRE. CHANG    0 / 15		Charging time adjustment;
BLK STRE. DISCHA   0 / 15		Discharging time adjustment;
BLK STRE. GAIN     0 / 1		Black Stretch Gain Switch; 0=Normal; 1=Gain UP
GAMMA CONTROL    0 ~ 1		Luminance Gamma Threshold Control; 0=Gamma OFF; 1~3=Gamma ON : 3 Modes
SECAM B L ADJ R    0 ~ 31		
SECAM B L ADJ B    0 ~ 31		
SECAM B F ADJ R    0 / 1		
SECAM B F ADJ B    0 / 1		
SECAM KILLER       0 ~ 3		
SECAM Y DL		
SECAM BGP SHIFT		
SECAM OFF		
U DL FINE ADJ       0 ~ 3		
V DL FINE ADJ       0 ~ 3		
V AGC		
DVD OFF TIME       0 ~ 100		DVD Power OFF Time Adjustment;
DVD TRI. TIME       0 ~ 250		DVD Trigger Pulse Width Adjustment;
DVD TRI. DELAY TIME 0 ~ 30		DVD Trigger Delay Time Adjustment;
CURTAIN SPEED		Curtain Speed Adjustment;
CURTAIN POS		Curtain Position Adjustment;
SAVER SPEED        0 ~ 10		Screen Saver Speed Adjustment;
MENU STYLE          0 / 1		Menu Style Setting; 0=Normal Menu; 1=Figure Menu
SOFTWARE VER.	№	Software Version;
INT AUDIO CON    ON / OFF		Internal Audio Control And Mute Function Selection; ON= Internal Audio Control And Internal Mute; OFF=PWM Volume Control; Hardware Mute;
AUTO2 SYSTEM SEL   0 / 1		Color System AUTO2 Function Selection;    AUTO2 = PAL – M & PAL – N & NTSC
DECODER CHOICE    0 / 1		Decoder IC Selection; 0 = M61260 ; 1 = M61264
BALANCE SEL        0 / 1		Balance Setting; ON=W/ Balance Control; OFF=W/O Balance Control;
VIDEO OUT          ON / OFF		VIF Detector Output Selection;
FACTORY KEY        0 / 1		Factory Key Setting; 1=Hot Key; 0= “ Menu + Standby ” ;
MENU H POS         0 ~ 60		OSD Display Horizontal Position Adjustment;
MENU V POS         0 ~ 30		OSD Display Vertical Position Adjustment;
AV2                  ON / OFF		AV2 Input Function Selection;

SVHS	ON / OFF		SVHS (Y / C) Input Function Selection;
YUV	ON / OFF		YUV Input Function Selection;
DVD	ON / OFF		DVD Input Function Selection;
DK	ON / OFF		Sound System DK Function Selection;
I	ON / OFF		Sound System I Function Selection;
BG	ON / OFF		Sound System BG Function Selection;
M	ON / OFF		Sound System M Function Selection;
AUTO1	ON / OFF		Color System AUTO1 Function Selection; AUTO1 = PAL & NTSC & 4.43NTSC & SECAM
PAL	ON / OFF		Color System PAL Function Selection;
NTSC	ON / OFF		Color System NTSC Function Selection;
NTSC4.43	ON / OFF		Color System NTSC4.43 Function Selection;
SECAM	ON / OFF		Color System SECAM Function Selection;
3.58PAL	ON / OFF		Color System 3.58PAL Function Selection;
PAL – M	ON / OFF		Color System PAL – M Function Selection;
PAL – N	ON / OFF		Color System PAL-N Function Selection;
KILLER LEVEL	0 / 1	№	Color Killer Sensitivity Threshold Switch; Status ‘ 0 ’ = 43dB ‘ 1 ’ ≈ 45dB
POWER ON MODE	0 ~ 2		Power ON Mode Selection; 0=Standby; 1=Power ON; 2=Status Of Power OFF;
□□□□□□□□□□ (0~9) symbol (A~Z)			Edit Logo Setting;
LOGO	ON / OFF		Logo Setting Switch;
COLOR	BLK/RED/ RE/YEL/BLU PUR/CYA/WHI		Logo Color Selection;
<b>Remarks:</b>			
<b>Symbol :To be alignment by production Line.</b>			
<b>Symbol : Not allow to adjust by production Line except production Engineer.</b>			
<b>Symbol № : Not allow to adjust by production Line.</b>			

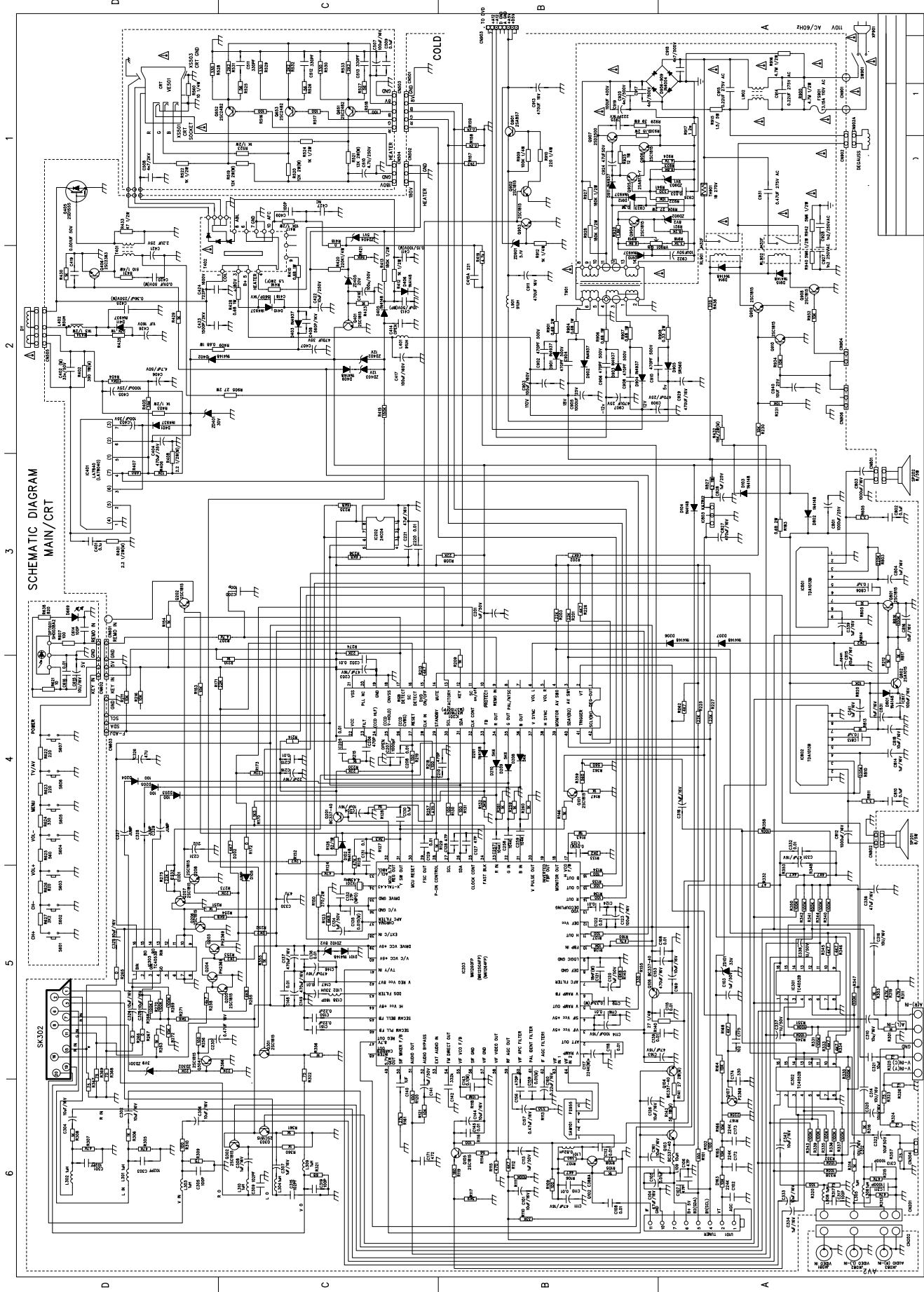


NOTE:

COPPER:2 Layer  
 SOLDER MASK:28 Layer  
 DRILL:24 Layer  
 COPPER SIDE:29 Layer  
 COMPONENT SIDE:26 Layer

STARLITE					
TITLE: SWITCH PCB		BOARD.	DATE CODE:20052003	SAMPLE:	
0708-A20344-00		PRINT FILES SCALE: 1 : 1		TOOLING:	X
DRAFTSMAN: ZENGXIANGFA				MODIFY:	
CHECKED BY:ZENGXIANGFA					

# SCHEMATIC DIAGRAM MAIN/CRT

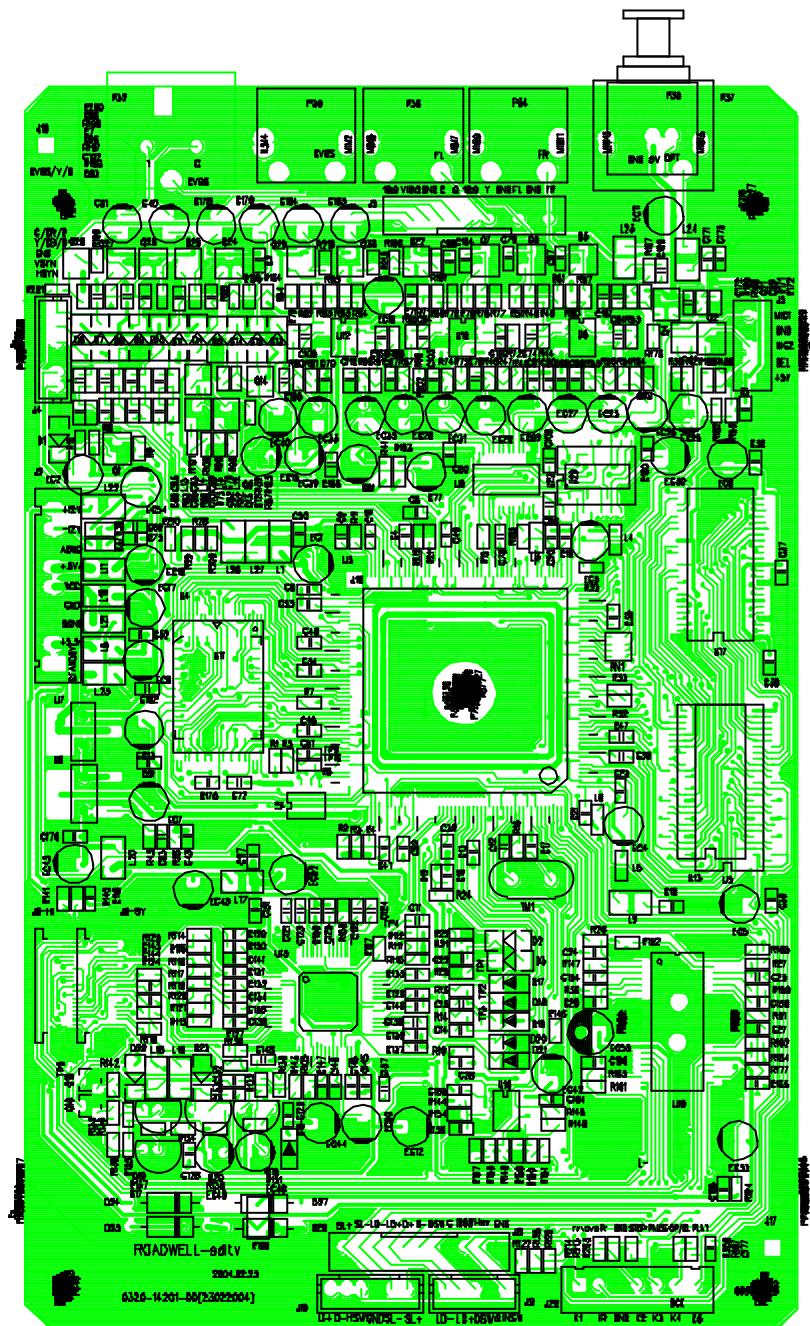


1 2 3 4 5 6

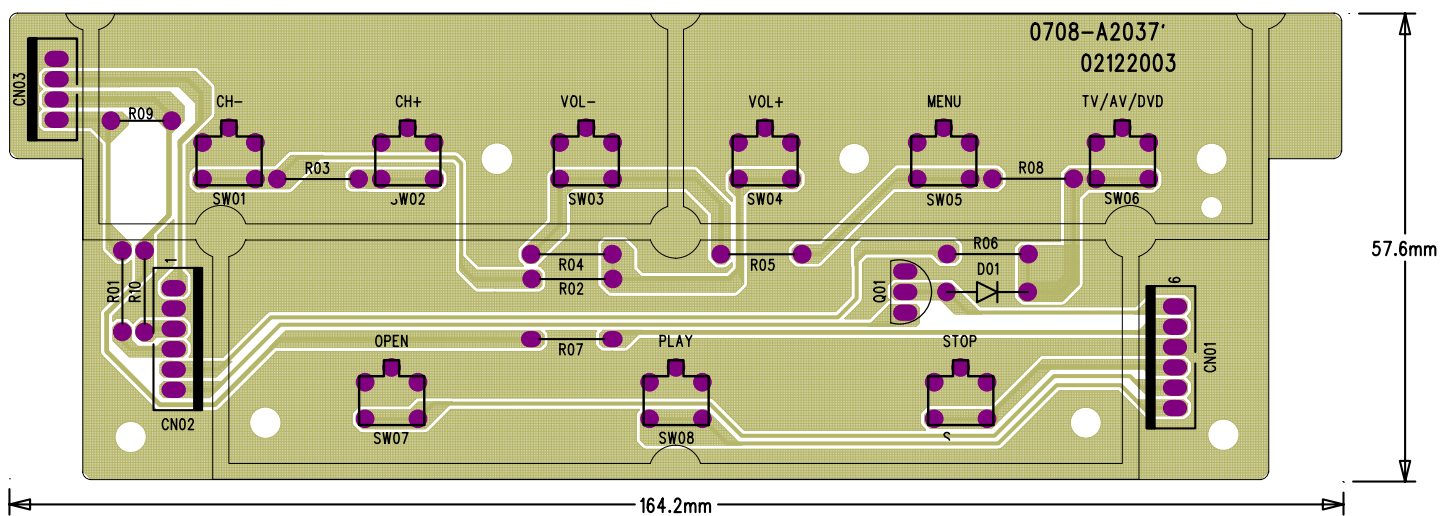
D C B A

1

TO-DIG(OUT)

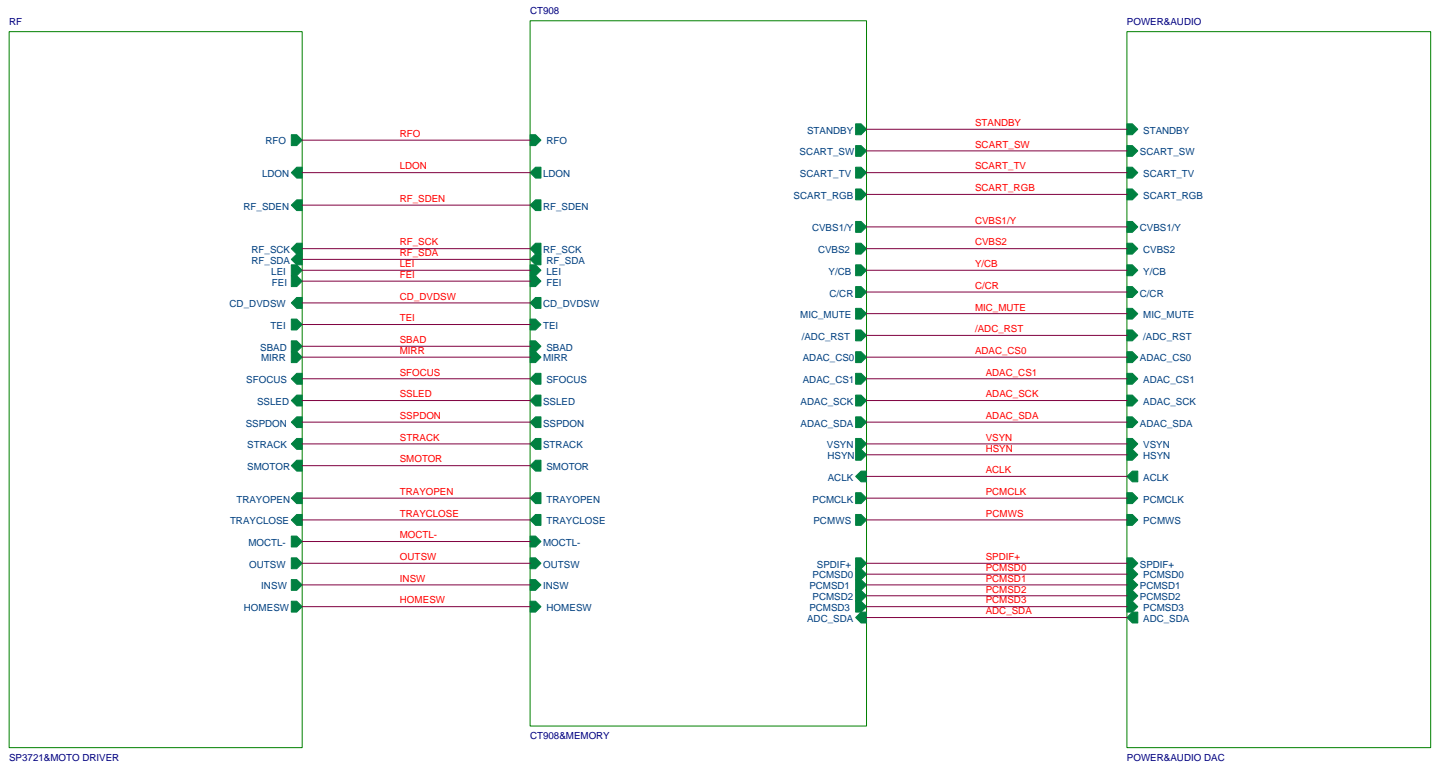






NOTE:

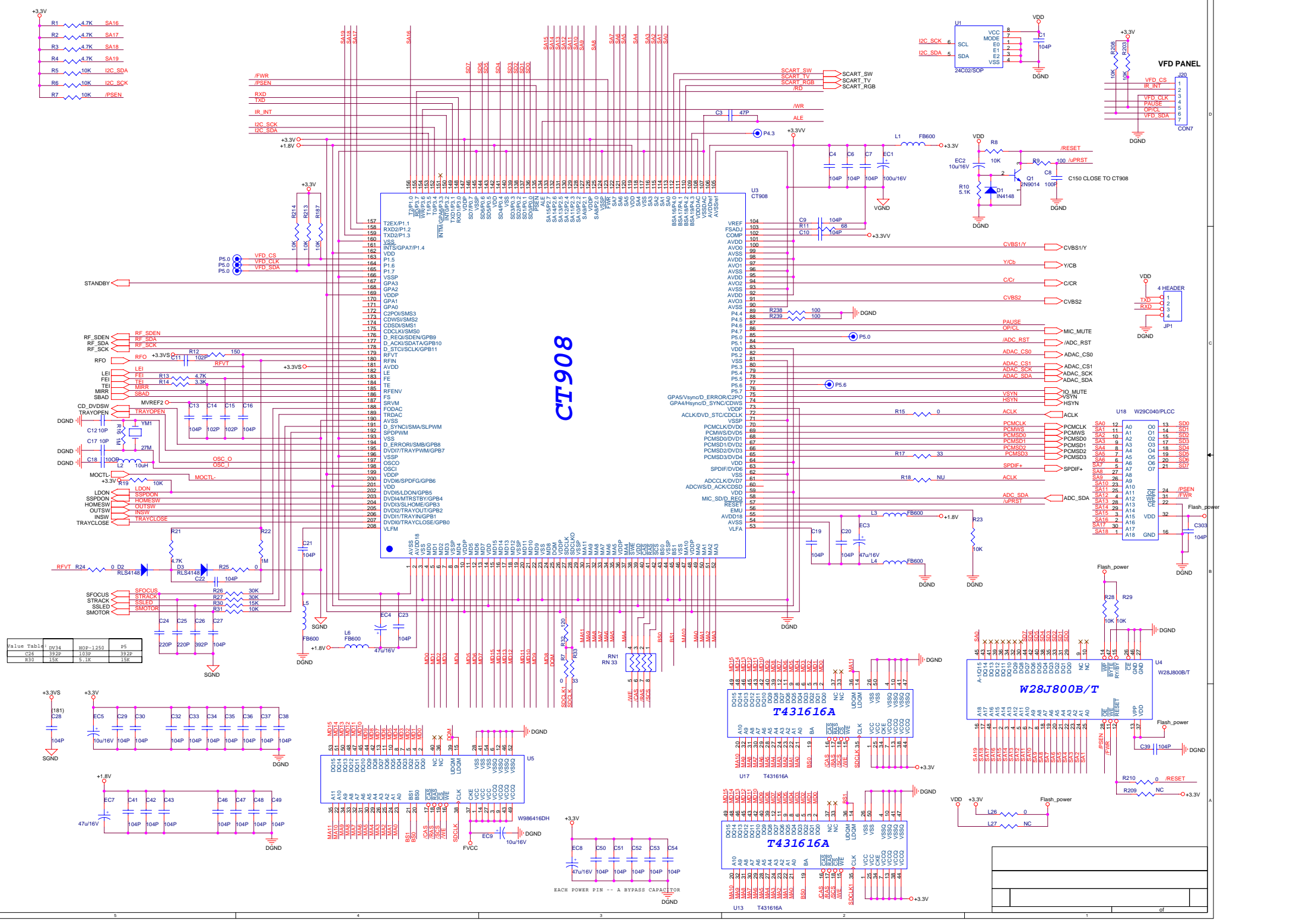
COPPER: 1 Layer  
COPPER SIDE: 29 Layer  
COMPONENT SIDE: 26 Layer  
SOLDER MASK: 28 Layer



SP3721&MOTO DRIVER

CT908&MEMORY

POWER&AUDIO DAC

Value Table:	W34	80P-1250	P5
C26	392P	103P	392P
R30	15K	5.1K	15K

CT908

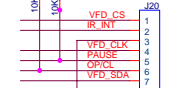
T431616A

T431616A

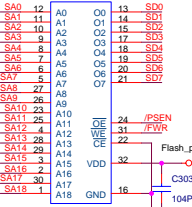
W28J800B/T

EACH POWER PIN -- A BYPASS CAPACITOR

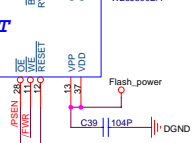
VFD PANEL

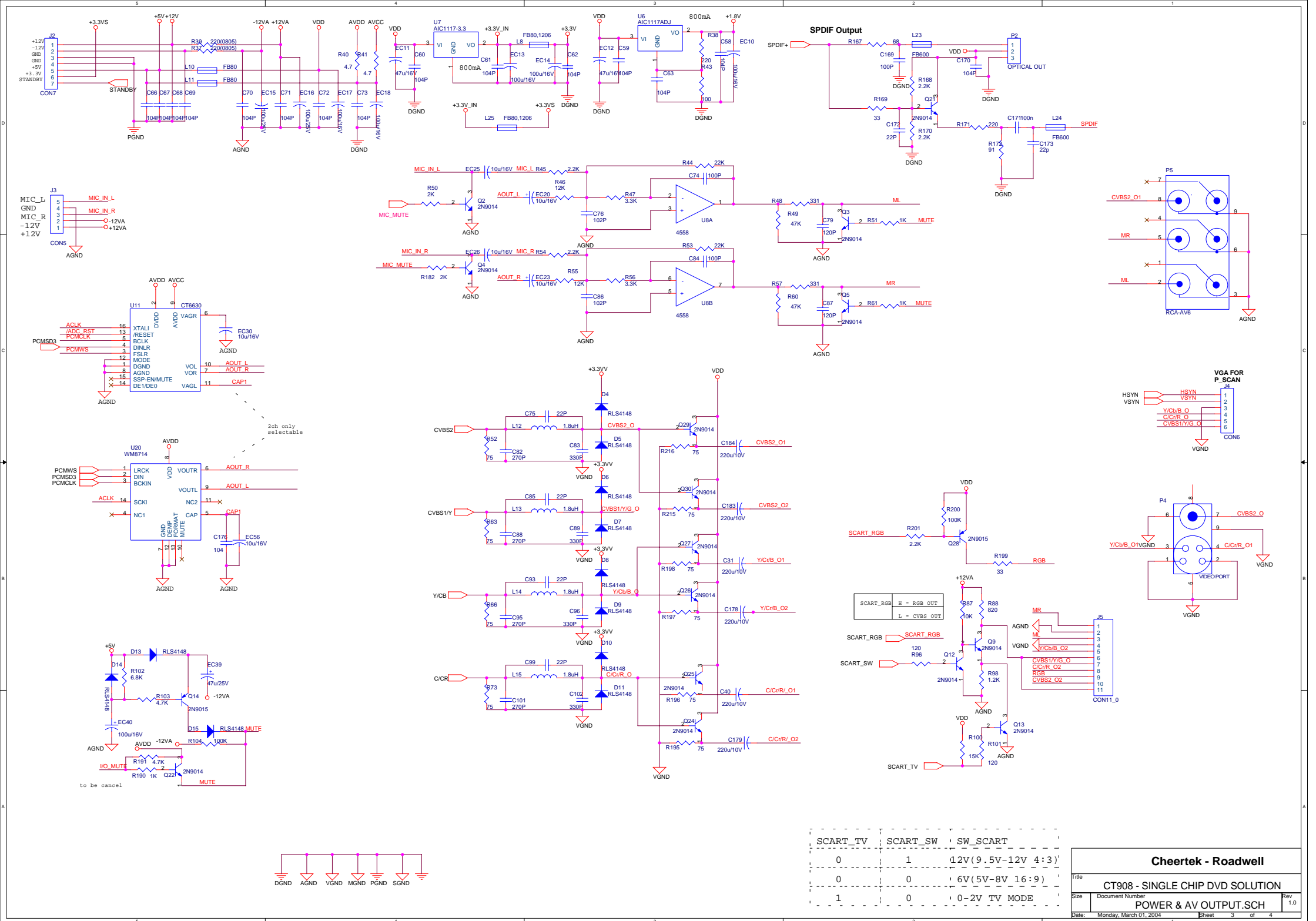


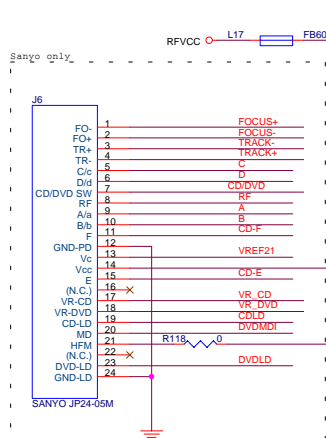
W28C040/PLCC



W28B800B/T

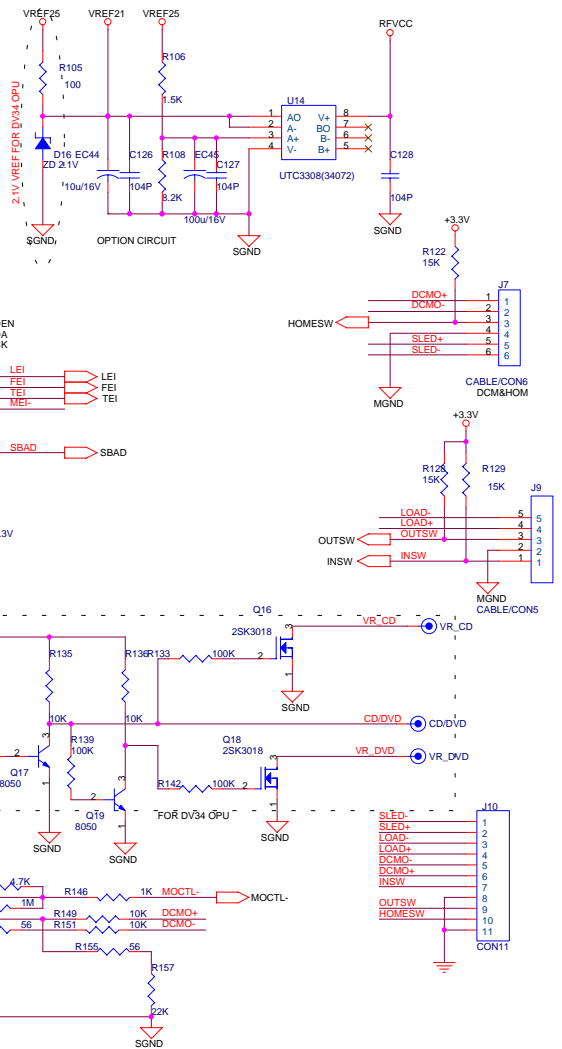
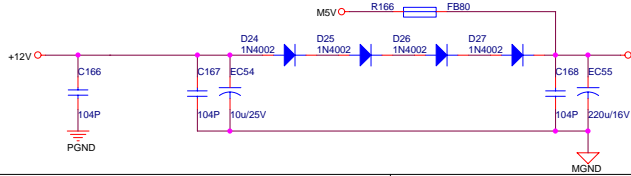
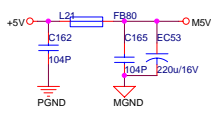
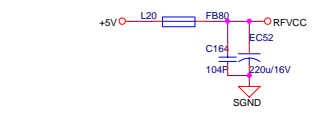
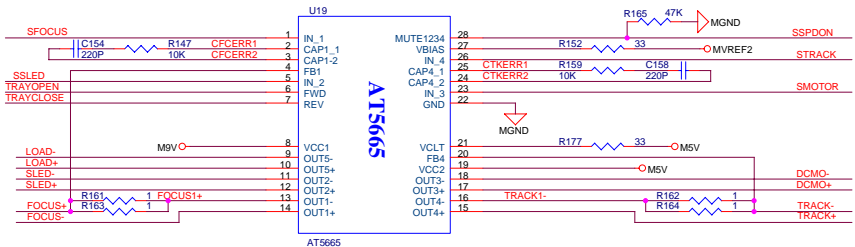
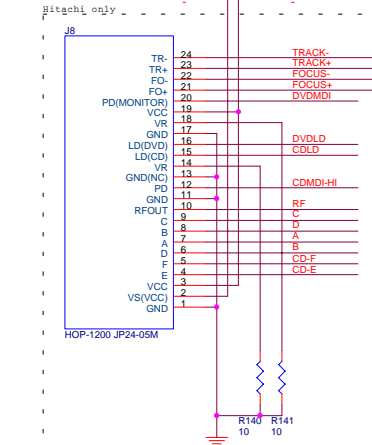


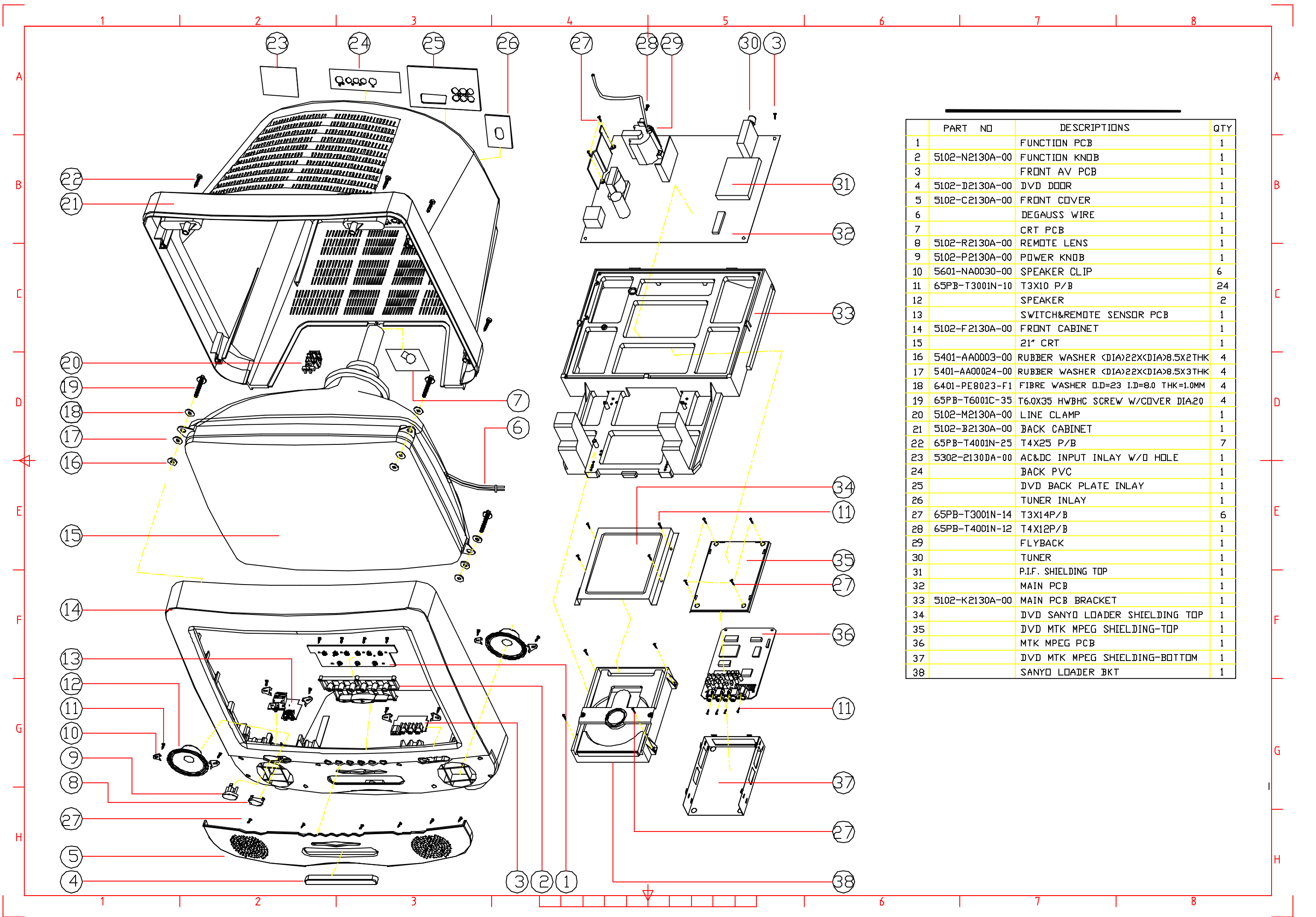




	Sanyo HD60	Hitachi 1200S
R113	open	close
R114	close	open
R115	open	close
R116	close	open
R117	open	close
R118	close	open
R119	open	close
R120	open	close
R121	close	open
R122	open	close
R123	close	open
R124	open	close

Value	SANYO DV34	HOP-1250
R127	15K	30K
R128	15K	30K
R129	562P	472P
R130	10	1
R131	5.1K	1K





	PART NO	DESCRIPTIONS	QTY
1		FUNCTION PCB	1
2	5102-N2130A-00	FUNCTION KNOB	1
3		FRONT AV PCB	1
4	5102-D2130A-00	DVD DOOR	1
5	5102-C2130A-00	FRONT COVER	1
6		DEGAUSS WIRE	1
7		CRT PCB	1
8	5102-R2130A-00	REMOTE LENS	1
9	5102-P2130A-00	POWER KNOB	1
10	5601-NA0030-00	SPEAKER CLIP	6
11	65PB-T3001N-10	T3X10 P/B	24
12		SPEAKER	2
13		SWITCH&REMOTE SENSOR PCB	1
14	5102-F2130A-00	FRONT CABINET	1
15		21" CRT	1
16	5401-AA0003-00	RUBBER WASHER <DIA>22X<DIA>8.5X2THK	4
17	5401-AA00024-00	RUBBER WASHER <DIA>22X<DIA>8.5X3THK	4
18	6401-PE8023-F1	FIBRE WASHER O.D=23 I.D=8.0 THK=1.0MM	4
19	65PB-T6001C-35	T6.0X35 HWBHC SCREW W/COVER DIA.20	4
20	5102-M2130A-00	LINE CLAMP	1
21	5102-B2130A-00	BACK CABINET	1
22	65PB-T4001N-25	T4X25 P/B	7
23	5302-2130DA-00	AC&DC INPUT INLAY W/O HOLE	1
24		BACK PVC	1
25		DVD BACK PLATE INLAY	1
26		TUNER INLAY	1
27	65PB-T3001N-14	T3X14P/B	6
28	65PB-T4001N-12	T4X12P/B	1
29		FLYBACK	1
30		TUNER	1
31		P.I.F. SHIELDING TOP	1
32		MAIN PCB	1
33	5102-K2130A-00	MAIN PCB BRACKET	1
34		DVD SANYO LOADER SHIELDING TOP	1
35		DVD MTK MPEG SHIELDING-TOP	1
36		MTK MPEG PCB	1
37		DVD MTK MPEG SHIELDING-BOTTOM	1
38		SANYO LOADER BKT	1

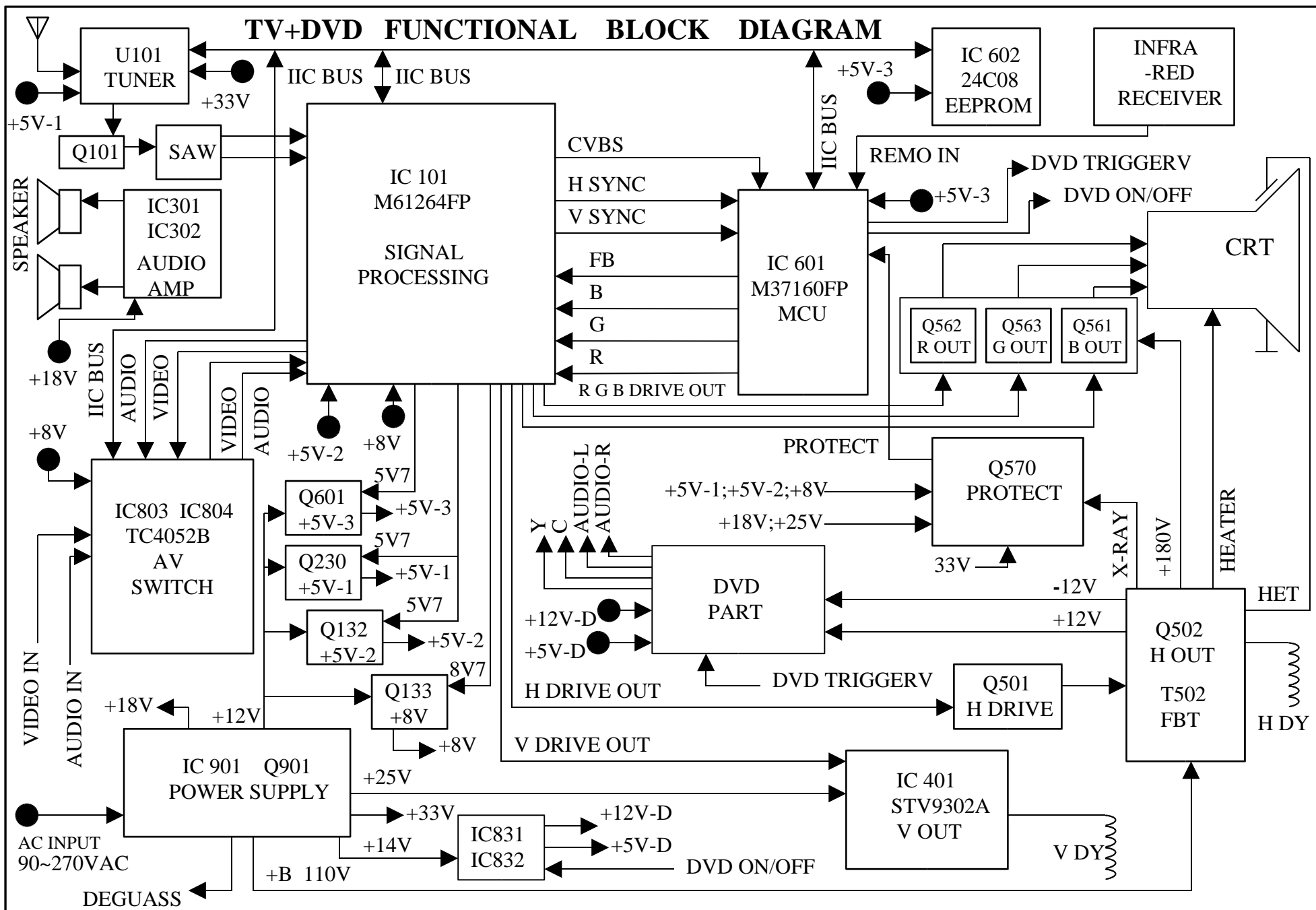


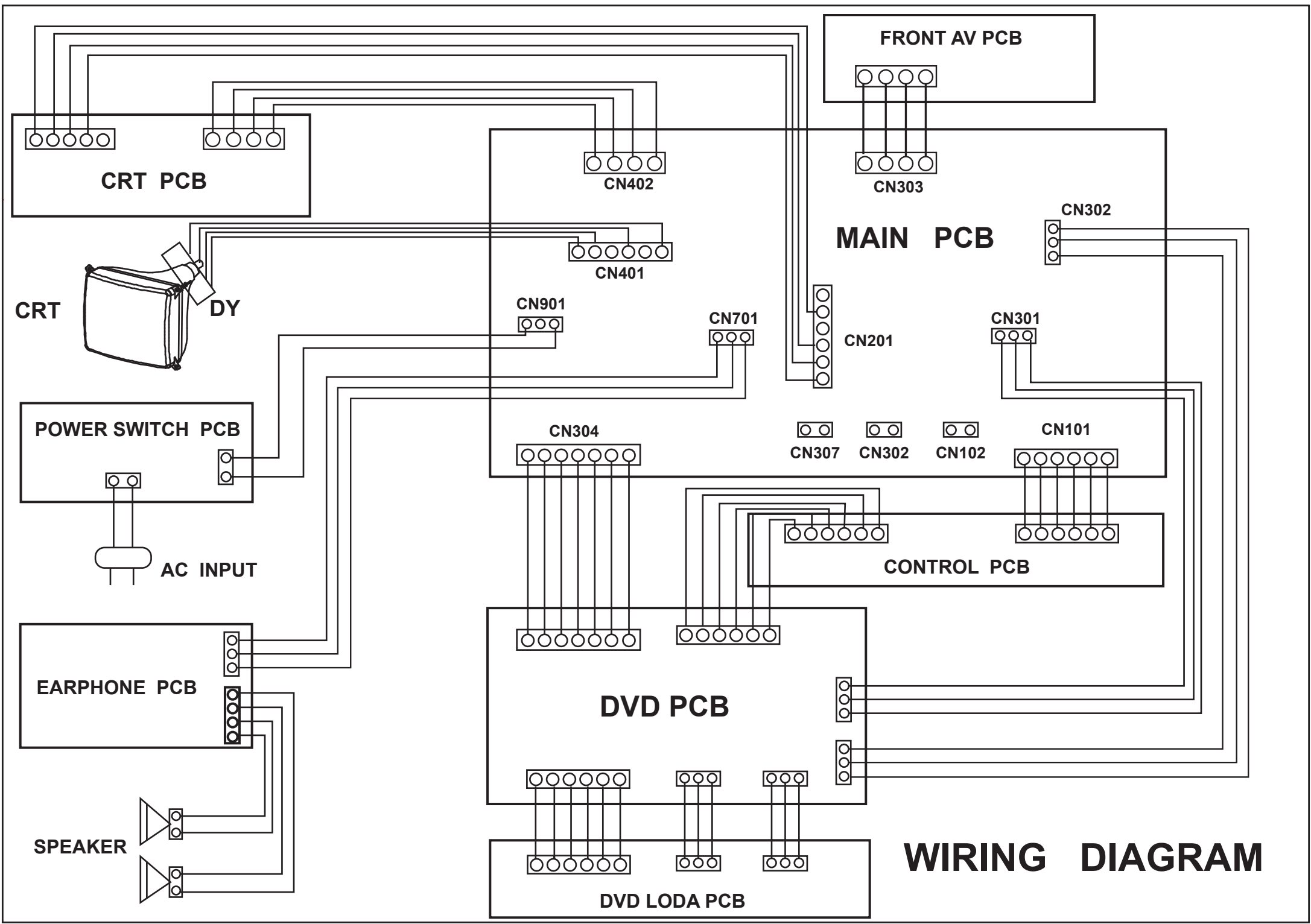






# TV+DVD FUNCTIONAL BLOCK DIAGRAM





**WIRING DIAGRAM**